

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-6. (Canceled)

7. (Currently amended) An isolated nucleic acid molecule comprising a nucleic acid sequence encoding a chimeric retrovirus envelope protein comprising an a Murine Leukemia Virus (MLV) ecotropic envelope protein and a heterologous short peptide ligand inserted within the N-terminal region or the variable region VRA of the extracellular domain (SU) of the MLV ecotropic envelope protein, wherein the heterologous short peptide ligand is flanked by at least one cysteine on each side, optionally with one or more intervening amino acids between an end of the heterologous short peptide ligand and the cysteine, and wherein a retroviral particle comprising the chimeric retrovirus envelope protein is capable of infecting a human cell, but not a mouse cell.

8. (Currently amended) A vector comprising a nucleic acid sequence encoding a chimeric envelope protein comprising a Murine Leukemia Virus (MLV) ecotropic envelope protein and that contains a heterologous short peptide ligand inserted within the N-terminal region or the variable region VRA of the extracellular domain of the MLV ecotropic envelope protein, wherein the heterologous short peptide ligand is flanked by at least one cysteine on each side, optionally with one or more intervening amino acids between an end of the heterologous short peptide ligand and the cysteine, and wherein a retroviral particle comprising the chimeric envelope protein is capable of infecting a human cell, but not a mouse cell.

9. (Original) The vector of claim 8, wherein the vector further comprises a nucleic acid sequence that encodes a therapeutically useful polypeptide.

10. (Previously presented) A recombinant retroviral particle comprising the nucleic acid of claim 7.

11-12. (Canceled)

13. (Currently amended) A method of altering retroviral tropism of a retrovirus, the method comprising  
obtaining a packaging cell;  
introducing into the genome of a retrovirus the nucleic acid sequence molecule of claim 7  
into the packaging cell;  
maintaining the packaging cell under conditions such that a retrovirus is produced; and  
harvesting the retrovirus from the packaging cell; thereby producing a pseudovirus  
retrovirus having an altered retroviral tropism.

14. (Currently amended) The method of claim 13, wherein the retrovirus comprises a  
murine leukemia virus (MLV) retroviral tropism is altered.

15. (Currently amended) The method of claim 13, wherein the ~~pseudovirus~~  
pseudotyped retrovirus does not express wild-type envelope protein.

16-35. (Canceled)

36. (Currently amended) The nucleic acid of claim 7, wherein the MLV ecotropic  
envelope protein is a wild type envelope protein.

37. (Currently amended) The nucleic acid of claim 7, wherein the heterologous short peptide ligand is selected from the group consisting of an RGD ligand, a ~~human epidermal growth factor receptor (HRG) ligand, or~~ and a gastrin releasing protein (GRP) ligand.

38. (Canceled)

39. (Previously presented) The vector of claim 8, wherein the vector is a retrovirus.

40. (New) The isolated nucleic acid molecule of claim 7, wherein the human cell is a human melanoma cell or a human breast cancer cell.

41. (New) The isolated nucleic acid molecule of claim 7, wherein the heterologous short peptide ligand is inserted at amino acid position 36 or 68 of the SU of the MLV ecotropic envelope protein.

42. (New) A recombinant retroviral particle comprising the nucleic acid of claim 41.

43. (New) The vector of claim 8, wherein the heterologous short peptide ligand is inserted at amino acid position 36 or 68 of the SU of the MLV ecotropic envelope protein.

44. (New) The vector of claim 8, wherein the human cell is a human melanoma cell or a human breast cancer cell.

45. (New) An isolated nucleic acid molecule comprising a nucleic acid sequence encoding a chimeric retrovirus envelope protein comprising a Murine Leukemia Virus (MLV) ecotropic envelope protein and a human epidermal growth factor receptor (HRG) ligand inserted within the extracellular domain (SU) of the MLV ecotropic envelope protein, wherein the

heterologous short peptide ligand is flanked by at least one cysteine on each side, optionally with one or more intervening amino acids between an end of the heterologous short peptide ligand and the cysteine, and wherein a retroviral particle comprising the chimeric retrovirus envelope protein is capable of infecting a human cell.

46. (New) The isolated nucleic acid molecule of claim 45, wherein the HRG ligand is inserted at amino acid position 1 or 230 of the SU of the MLV ecotropic envelope protein.

47. (New) A recombinant retroviral particle comprising the nucleic acid of claim 45.

48. (New) A vector comprising a nucleic acid sequence encoding a chimeric retrovirus envelope protein comprising a Murine Leukemia Virus (MLV) ecotropic envelope protein and a human epidermal growth factor receptor (HRG) ligand inserted within the extracellular domain (SU) of the MLV ecotropic envelope protein, wherein the heterologous short peptide ligand is flanked by at least one cysteine on each side, optionally with one or more intervening amino acids between an end of the heterologous short peptide ligand and the cysteine, and wherein a retroviral particle comprising the chimeric retrovirus envelope protein is capable of infecting a human cell.

49. (New) The vector of claim 48, wherein the HRG ligand is inserted at amino acid position 1 or 230 of the SU of the MLV ecotropic envelope protein.

50. (New) A method of altering retroviral tropism of a retrovirus, the method comprising  
obtaining a packaging cell;  
introducing the nucleic acid molecule of claim 45 into the packaging cell;  
maintaining the packaging cell under conditions such that a retrovirus is produced; and  
harvesting the retrovirus from the packaging cell; thereby producing a retrovirus having an altered retroviral tropism.

Applicant : Michael R. Green et al.  
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Amendments to the Drawings:

The attached replacement sheet of drawing includes changes to Figure 8 and replaces the original sheet including Figure 8.

The Office objected to Figure 8 as illegible. Thus, a replacement figure is submitted herewith containing no substantive changes.

Attachments following last page of this Amendment:

Replacement Sheet (1 page)